REMARKS

Claims 12-14 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Fuller et al. Applicants respectfully traverse this rejection, because the cited reference does not disclose (or suggest) at least two notch filters that exhibit asymmetrical gain changes on opposite sides of a cutoff frequency of the respective notch filters.

As described in claim 12, the present invention includes two notch filters 202 and 204 (see Fig. 9) which exhibit asymmetrical gain changes on opposite sides of a cutoff frequency. In the case of the notch filter 202, Fig. 11A shows that the gain shown by the curve to the left of (below) the cutoff frequency f2 is larger than the gain shown by the curve to the right of (above) the cutoff frequency f2. Similarly, in the case of notch filter 204, Fig. 12A shows that the gain, i.e., the curve to the left of (below) the cutoff frequency f4 is lower than the gain, i.e., the curve to the right of (above) the cutoff frequency f4.

The Examiner asserts that Fig. 4 of Fuller et al. shows the claimed asymmetrical gain changes of the notch filters. Applicants respectfully disagree. Referring to Fig. 4, Fuller et al. in column 6, lines 16-22 states that "a magnitude frequency response... using conventional prior art linear notch filters is shown by a dashed curve 200 and using non-linear notch filters of the present invention is shown by a solid curve 202" (emphasis added). Thus, Fig. 4 merely shows a comparison of the notch filters that were used alternatively in the controller 7 of Fuller et al., i.e., the notch filter of Fuller et al. and a conventional linear notch filter which is prior art to the filter of Fuller et al. The curves in Fig. 4 do not represent two types of filters (i.e., the conventional and the invention of Fuller)

that are both used together in the device of Fuller et al. Thus, the reference does not disclose (or suggest) the two notch filters each exhibiting asymmetrical gain changes on opposite side of their respective cutoff frequencies.

Fuller et al. discloses a notch filter design which provides characteristics for canceling the resonant frequencies fn_1, fn_2, and includes a "cascade of three second order notch filters, two at 1553 Hz" (a double notch) and one at 2413 Hz" (col. 5, lines 55-60). The combined characteristics have the overall transfer function shown in Equation 3 (see col. 5, line 61), and is represented by the solid curve in Fig. 4 ("Referring now to Fig. 4 a magnitude frequency response for the notch filters of Eq. 3. . ." (col. 6, lines 16-17)). Thus, it is clear that the solid curve in Fig. 4 represents the combination of three separate notch filters. Fuller et al., however, does not disclose (or suggest) the characteristics of the individual notch filters. In other words, Fuller et al. does not disclose two notch filters that each exhibit asymmetrical gain changes on opposite sides of a cutoff frequency of the respective two notch filters. For at least this reason, claim 12 and its respective dependent claims 13 and 14 are allowable over Fuller et al.

Claims 13 and 14 stand rejected under 35 U.S.C §103 (a) as being unpatentable over Fuller et al. in view of Joshi et al. Applicants respectfully traverse this rejection for the reasons given above with respect to claim 12

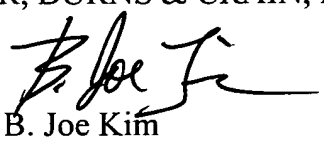
Moreover, Applicants respectfully submit that it would not have been obvious for one of ordinary skilled in the art to combine the references as suggested by the Examiner. The novelty of present invention as recited in claims 13 and 14, lies in the fact that at least

three different notch filters are arranged in a particular manner with respect to each other and are made to have a particular gains on either side of their respective cutoff frequencies. In other words, it is the particular arrangement of these notch filters and the characteristics of the gain changes that define this invention. Joshi et al. merely teaches that there are two types of notch filters, asymmetrical and symmetrical. This is known to those skilled in the art and does not teach the particular arrangement of the present invention. Therefore, the cited references, even if combined, still would not disclose or suggest the present invention as described in claims 13-14. Claims 13-14 are also allowable for this reason, also.

For all of the above reasons, Applicants request reconsideration and allowance of the claimed invention. The Examiner should contact Applicants' undersigned attorney if a telephone conference would expedite prosecution.

Respectfully submitted,

GREER, BURNS & CRAIN, LTD.

By 

B. Joe Kim
Registration No. 41,895

July 24, 2006

Suite 2500
300 South Wacker Drive
Chicago, Illinois 60606
(312) 360-0080
Customer No. 24978
P:\DOCS\0941\70322\A90360.DOC